## MILEAGE OF CONCRETE ROADS

Growth in Popularity Indicated by Rapid Increase in Recent Years in United States.

The mileage of concrete pavements in the United States has increased rapidly, and it is likely to continue to increase, according to a new bulletin of the United States department of agriculture. This bulletin gives the estimated amount of concrete pavement in the United States in 1914 as 19,200,000 square yards; in 1909 it was only 364,000 square yards.

The principal advantage of concrete pavements which have led to this increase in popularity are said to be: 1. Durability under ordinary traffic

2. A smooth, even surface offering little resistance.

conditions.

3. Absence of dust and ease with which it may be cleaned.

4. Comparatively small cost of maintenance until renewals are neces-

5. Availability as a base for another type of surface if desirable. 6. Attractive appearance.

In commenting upon these advantages the bulletin states that the durability of concrete roads has not yet been proved by actual practice, because there are no very old pavements as yet in existence, but from the condition of those which have undergone several years' service it seems probable that they will be found to wear well.

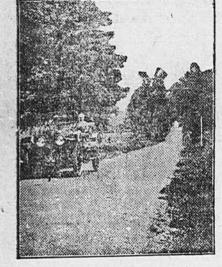
The disadvantages of concrete as a road surface are:

1. Its noise under horse traffic.

2. The wearing of the necessary joints in the pavement, and the tendency to crack, with its consequent rapid deterioration.

3. The difficulty of repairs when these become necessary.

In the past efforts have frequently been made to overcome these objections to a certain degree by covering the concrete pavement with a bituminous wearing surface. At the present time, the specialists in the department hold that this cannot be economically



Macadam.

justified, although it is possible that future investigation may change the situation in this respect. In the present state of road science, however, it seems that where traffic conditions are such that a bituminous surface on a concrete road is practicable a bituminous-surface macadam road would be equally practicable and certainly cheaper. Where traffic is too heavy for macadam road the bituminous surface is likely to give way and the uneven manner in which it knew I couldn't do the same thing. fails tends to produce excessive wear on portions of the concrete.

For a successful concrete road, hardness, toughness and uniformity are the most essential qualities. These can be secured to a great extent by care in the selection of the constituent materials and the proportions in which they are mixed. Sample specifications are included in the bulletin, No. 249, "Portland Cement Concrete Pavements for Country Roads." These specifications are believed to typify the best engineering practice as it has been developed up to this time. They cover such points as materials, grading, subgrade and construction.

Good Roads Appreciated. "Motor cars," said Mr. Chuggins, have done more than anything else to make people appreciate good roads."

"But your machine is constantly breaking down, regardless of the road."

"Yes. But it's a great comfort not to have to climb around in a mudhole while I am fixing it."

Farmer Saves His Horses. In considering roads, remember that no town looks so good to the farmer an can drive a hog?" that he will kill his horse to get there.

Improve Rural Conditions. Good roads will improve every con- a man can. I'll stay here and watch." dition of rural life; and they will cost you no more than poor roads are

costing you now. Increases Farm Value. The better the roads to a farmer's residence, the closer it brings his farm to town, thereby increasing the value of the farm.

Isolated Town, If the roads around a town are bad, it might as well be on an island.

## REPAIRING THE PENSON

By JOHN DARLING.

"Say!" shouted a tramp over the gate of the Mortimer place. Miss Nellie Mortimer sat on the veranda reading a book.

"Say! I say!" The girl shook her head to signify that there was nothing doing in his

"Oh, I'm not after a hand-out." "Then go on!"

"And I don't want to do that until I have told you that there is a hog in the side garden out there, and that he is rooting up things for fair!'

"The hog again!" exclaimed Miss Nellie as she started up.

"Yes'm-same hog!" grinned the "But he must be driven out at once.

If you will drive him out, I'll-" "Oh, no, Missy," interrupted the tramp as he began moving away, "you

can't play that on me." Mr. Mortimer had an interest in a business in the city and spent most of his time there. On this morning no one was at home except herself and the cook, and as for the latter she was fat and lame. That hog must go out, however.

Miss Nellia drove him down the road and found the place he had broken in, and then it was hammer and nails and a couple of boards. She had got all the materials on the spot when a young man came along on foot. She recalled that she had seen him pass in an auto an hour before, and was wondering if he had met with an accident, when he halted and raised his ca ..

"Had a break-down and am walking back."

She wanted to ask him why he didn't walk on then, but she spotted that hog coming back and uttered a muttered threat instead. This caused him to notice the materials and the hole in the fence, and he continued:

"Ah, I see! The beast has been in the garden, and you are going to secure the fence against him. I have read that few women could drive

"I have read that same thing of the men!"

"Here is the chance to test the matter."

He reached for a board and knelt down and held it against the fence for her and smiled in a superior way and in anticipation. That smile settled the matter. Miss Nellie picked up hammer and nails and began driv-

There was a smash and a yell! The hammer had missed the nail and hit the thumb!

"You-you-" "I didn't do it!" he protested.

"But if you hadn't been here and looking on it wouldn't have happened!

"Nonsense! Didn't I say that a woman couldn't drive a nail without mashing her thumb?" "And didn't I say that a man couldn't?

You pick up that hammer and try it: The board was held in place while New Jersey State Road, Bituminous the nail was neatly driven, and the young man turned to Miss Nellie with

that superior smile. "Go ahead!" she ordered. "There's three more nails to be driven yet."

He started on the second. There was a smash and a howl. It was more than a howl. It was language-lots For a moment the vicof language. tim thought himself far from the haunts of men (and women), but then he calmed down and said:

"I sincerely beg your pardon." "It was unfair of you, when you

How bad is it?"

He held out his hand for inspection. The blood had already begun to settle under the nail. "And yours?" he asked.

It was as bad, and the girl's face had become very pale with the pain of it. At that moment the cook came limping out to see what had happened,

thumbs to her. "Great cats and dogs!" she exclaimed. "Why both of you will surely lose your thumbnails, anyhow, and it will be a miracle if you are not dis-

and they held out their bruised

figured for life!" The "mashed" took seats on the veranda and held on to their thumbs, while the cook brought out bandages and ointments by the handful.

"Why did you go and do it?" asked the woman as the last thumb was cared for.

"If this gentleman hadn't come along and butted in-" began Miss Nellie, when she was interrupted:

"Whose name is Earl Bell. Excuse me that I haven't given it before. 1 believe this is Miss Mortimer?" "And I believe that pesky hog has

got back into the garden again! Perhaps you have also read that no wom-

"If I ever find one I'll-I'll admire

"Well, I want you to show me that When that hog found that he had a man to deal with he quit his job and made for the fence, and then the young man left. Did he ever return? Read what the cook said the other

"Oh, yes, he returned and returned and returned, and he's returning yet, and if that hog don't bring about a marriage and a wedding trip, then I'll never go by signs again!"

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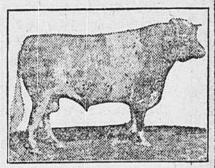


## START TRAINING BULL EARLY

Inserting Nose Ring Is Simple and Short Operation—Composition Metal Does Not Rust.

A bull's training must be started early. A light weight ring should be inserted in his nose when he is from nine to twelve months old, but under no circumstances should he be led by the ring until three or four months after so that the nose can heal up

Inserting the nose ring is a simple and short operation when properly done. First tie the bull securely to a post by the head and horns, then take a common trocar and cannula, well sterilized, and push it through the thinnest part of the membrane that separates the nostrils, withdraw the trocar, leaving the cannula in the opening. Put one end of the opened ring in the pointed end of the cannula and then carefully withdraw cannula, which brings the ring into the opening and after closing ring and putting in the screw, the job is done. Before the operation, the ring should be ex-



A Shorthorn Bull.

amined and all rough edges carefully filed down so there is nothing to irritate the nose and keep it raw and

When the animal is about two to two and one-half years old, the light ring should be removed and a good heavy ring inserted. Iron rings should not be used as they rust and keep the bull's nose raw and sore. The best are made of brass or bronze composition metal and do not rust.

In tying up the bull by the nose, one should be careful to avoid frightening him, causing him to jump back and slit the ring out of his nose. It is safest to pass the tie chain through the nose ring and then up and around his horns and when he jerks back most of the strain comes on the horns and not at the nose.

## PROPER TOOLS FOR DAIRYING

Manure Spreader Is One of Most Profitable Implements-Silo Is Regarded as Essential.

It is impossible to give a specific answer to the question as to what tools a dairyman should possess. Much depends upon a man's pocketbook and the possibility of his changing work with neighbors to get the use of their tools, and upon labor conditions in general. For instance, a manure spreader is one of the most profitable implements for a farmer with any amount of dressing to distribute. Yet it is possible to handle the manure in the old way if a man simply cannot buy a spreader.

If you are dairying you ought to have a silo, and that means a silage cutter and an engine, unless you can arrange with a neighbor to do the work. If you raise potatoes in any quantity a planter, sprayer, and surely a digger, will perform the work most economically. Yet it is possible to get along without these. Of course, you would not expect to compete very successfully with growers who have such improved machinery. This class of tools is in use only a portion of the year, and it ties up your capital to your disadvantage if you have but little to begin with. There are certain things that every farmer is expected to have, such as wagons, plows, harrows, mowing machine, hayrake, etc.

## FEED CALVES IN STANCHIONS

Discourages Desire to Suck One Another's Ears-Wooden Device Is Entirely Satisfactory.

There are several good reasons for feeding calves in stanchions. The calves can be fed their milk, then their grain, and after they have eaten the grain they will lose their desire to suck one another's ears ... A stanchion made of wood will be entirely satisfactory. It should be made from 3 to 31/2 feet high and 18 to 24 inches from center to center, with the neck space 4 to 5 inches wide. It is built in the same manner as the old style rigid stanchion. The calf should be fastened while eating, but loosened from the stanchions after it has eaten its grain. The calf pens and stanchions should be built in the south side of the barn, where plenty of sunshine and light car, be had. There is no disinfectant that will take the place of sunshine.

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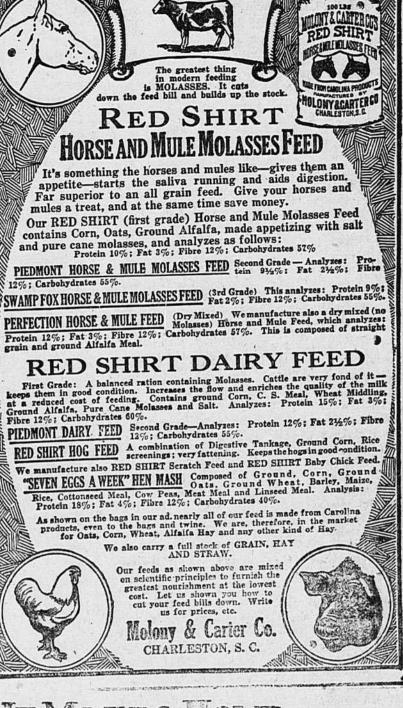
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